

REMARKS

By this amendment, claim 2 has been amended and new claims 7-12 have been added. Claim 2 has been amended to recite that the additional blowing agent is a chemical blowing agent. Support for this change can be found, *inter alia*, in paragraph [0016] of the specification. Support for new independent claim 7 can be found, *inter alia*, in original claim 1 and in paragraphs [0009], [0012-0014] and [0018] of the specification. New dependent claims 8-12 are supported by original dependent claims 2-6, respectively. Claims 1-12 are presented for further examination.

The rejection of claims 1-6 under 35 U.S.C. § 103(a) as obvious over Kruecke, DE 198 22 944 (Kruecke '944), and the rejection of claims 1-6 under 35 U.S.C. § 103(a) as obvious over Kruecke, US 6,080,799 (Kruecke '799) and/or US 6,380,275 (Kruecke '275) is respectfully traversed.

Claim 1 relates to a non-combustible premix. The premix consists essentially of at least one polyol, a binary blowing-agent mixture, and a phosphorus compound. As required by claim 1, the at least one polyol is selected from the group consisting of polyether polyols and polyester polyols, and the binary blowing-agent mixture includes a mixture of a) 1,1,1,3,3-pentafluorobutane, and from 5 to 7 wt.% of b) 1,1,1,2-tetrafluoroethane, 1,1,1,2,3,3,3-heptafluoropropane or 1,1,1,3,3-pentafluoropropane.

Applicants have surprisingly discovered that the premix composition can be made non-combustible by including in the premix both a minimum amount of

an additional blowing agent (i.e., a binary blowing-agent mixture) and a phosphorus compound. Applicants have also discovered that the independent addition of either the additional blowing agent or the phosphorus compound is ineffective in producing a premix that is non-combustible.

None of the Kruecke patent documents disclose or suggest a non-combustible premix composition consisting essentially of (i) at least one polyol, (ii) a binary blowing-agent mixture, and (iii) a phosphorus compound. Applicants submit that Kruecke '944 (equivalent to Kruecke '275) does not teach a non-combustible premix composition having the claimed composition. Kruecke '944 does not disclose or suggest a non-combustible premix composition having the required components in the required amounts. Further, Kruecke '799 teaches that various blowing agent mixtures may be non-combustible, but fails to teach a non-combustible premix composition, as claimed. Pointedly, all three Kruecke patent document fail to teach a premix composition consisting essentially of a polyol and a binary blowing-agent mixture and a phosphorus compound, much less that such a composition would be non-combustible.

The inventor's Declaration under 37 C.F.R. § 1.132, which was filed on August 14, 2006, sets forth facts establishing the criticality of the claimed compositions in achieving the new and unexpected result of a non-combustible premix. Applicants note the Examiner's comments regarding the Declaration allegedly being unsigned and allegedly relating to compositions not

commensurate in scope with the claims. Both these assertions by the Examiner are incorrect.

The corrected Declaration filed on August 14, 2006 was executed by the inventor. The executed Declaration also presents evidence of unexpected and unforeseen results relating to premix compositions that are commensurate in scope with the claimed compositions. The following remarks are presented in response to the Examiner's allegations raised on page 8 of the Office Action that the Declaration relates to compositions outside of the scope of the claimed invention.

Initially, the Examiner asserts that the showings of paragraph 11 of the Declaration are not commensurate in scope with the claims. This is incorrect. Paragraph 11 describes premix compositions having a phosphorous compound content of 11.7 or 11.8 wt.% and further describes a mixture having 21.9 or 22.2 wt.% of a binary blowing agent. The phosphorous compound contents of 11.7 and 11.8 wt.% clearly fall within the claimed range of 10 to 20% by weight, and the binary blowing agent contents of 21.9 and 22.2 wt.% clearly fall within the claimed range of from 4 to 35% by weight of a binary blowing-agent mixture.

Second, the Examiner asserts that Table 1 is directed toward a 97:3 ratio of PFB to HFP. This is incorrect. Applicants note that a corrected Declaration, including a correction made to Table 1, was filed with the Reply dated August 14, 2006 and that the corrections to the Declaration were discussed in detail in the Remarks to the Reply. Table 1 relates to a 93:7 ratio of PFB to HFP. In view of

the foregoing, and particularly in view of the Examiner's own acknowledgment of the corrected Declaration, Applicants find the Examiner's position regarding Table 1 confusing.

Finally, the Examiner asserts that the claims are not commensurate in scope with the data presented in Table 2. A more careful reading of the Declaration, however, reveals that Table 2 presents comparative as well as inventive data which substantiate unexpected and unforeseen results. For example, the addition of the phosphorous compound TCPP to samples comprising 6.6% and 8.7% binary blowing agent (within the claimed range of 4 to 35% by weight) substantially increases the flash point of these samples, while the addition of TCPP to a comparative sample comprising only 2.1% binary blowing agent (outside of the claimed range) results in a disadvantageous decrease in the flash point (see paragraphs 13-20 of the Declaration).

Applicants submit that the signed Declaration presents evidence of unexpected and unforeseen results relating to the claimed premix compositions which, when contrasted with comparative compositions, clearly supports a conclusion of non-obviousness with respect to the cited references.

In view of the foregoing, reconsideration and withdrawal of the rejections are respectfully requested.

The rejection of claims 1-6 on the ground of non-statutory obviousness-type double patenting over claims 1-25 of Kruecke '275, the rejection of claims 1-6 on the ground of non-statutory obviousness-type double patenting over claims

1-15 of Kruecke '799 in view of Hinz, US 5,552,450, and the rejection of claims 1-6 on the ground of non-statutory obviousness-type double patenting over co-pending application no. 11/207,824 to Zipfel et al. ("Zipfel") in view of Hinz is respectfully traversed. These rejections fail essentially for the same reasons as the §103 obviousness rejections discussed above.

Claim 1 relates to a non-combustible premix consisting essentially of at least one polyol, from 4 to 35% by weight of a binary blowing-agent mixture, and 10 to 20% by weight of a phosphorus compound.

Claims 1-25 of Kruecke '275 relate to a method for producing a polyurethane foam and a blowing agent composition and do not relate at all to a non-combustible premix. Claims 1-15 of Kruecke '799 relate to a blowing agent and a method of producing a foamed plastic. Claims 1-8 of Zipfel relate to a noncombustible pre-mixture comprising at least one polyol, at least one blowing agent, and a halogenated alkane in an amount sufficient to render the pre-mixture non-combustible.

None of the claims of Kruecke '275 or Kruecke '799 or Zipfel relate to a premix having all the claimed components, much less the claimed components in the claimed proportions. Specifically, in contrast to the assertions made in the Office Action, it would not have been obvious to select the claimed composition of the binary blowing-agent mixture, the amount of the binary blowing-agent mixture in the premix, and the amount of the phosphorus compound in the premix absent some teaching or suggestion that a non-combustible premix could

be prepared by correctly choosing the appropriate components and including them at the appropriate proportions.

As set forth in MPEP § 2144.05:

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation.

Kruecke '275, Kruecke '799 and Zipfel each fail to identify the claimed premix composition much less teach that this composition in any way affects the non-combustibility of the premix. Where the prior art does not recognize the parameter to be optimized as a result-effective variable, the claims cannot be held obvious. See *In re Antonie.*, 195 USPQ 6 (C.C.P.A. 1977).

In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.


If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

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If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #037110.52632US).

Respectfully submitted,

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